

REMARKS

In response to Office Action claims 1-3 and 11-16 have been amended. Accordingly, claims 1-3 and 10-17 are pending. Claims 4-9 have been withdrawn from consideration.

Claims 1-3 and 11-16 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Japanese Patent No. 404152676 (JP '676).

Amended claims 1-3 recite a semiconductor device comprising a TFT containing an active layer having a channel forming region wherein "the channel forming region has a convex portion or a concave portion extending in a channel width direction." Likewise, amended claims 11 and 12 recite that at least one convex or concave portion, respectively, extends "in a direction perpendicular to a channel length direction." Each of amended claims 13-16 recite that channel forming region has at least one concave or convex portion "extending in a channel width direction."

As fully set forth in the specification as originally filed, any grain boundaries that occur are formed in the same direction as the flow of the carrier. Hence, the motion of the carrier does not become impeded. Moreover, with the respective concave or convex portions extending in the channel width direction allows the channel region to fit within a single grain. Also, the grain boundaries are limited to either a single or no grain boundaries in the channel forming region. This has the effect of limiting dispersion in the electrical characteristics of the adjacent TFTs. It should be noted, that channel width direction is defined in the specification as the direction in which grain boundaries are formed so as to cross the island shaped semiconductor film, i.e., a direction perpendicular to the carrier length direction or carrier flow direction. In other words, from the top to bottom (or bottom to top) of the page. See, Figs. 1A-1C, 16A-16E and 17A-17E and page 34 of the specification.

In contrast, in JP '676 the concave or convex direction is located along the channel *length* direction. See Fig. 1j of JP '676. Thus, JP '676 does not disclose or suggest a convex portion or a concave portion "extending in a channel width direction", as recited in amended claims 1-3 and 13-16, or "in a direction perpendicular to a channel length direction", as recited in claims 11 and 12.

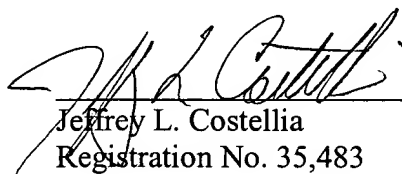
Therefore, Applicants respectfully submit that the claims are allowable over JP '676, as the reference does not disclose each and every element of the claimed invention.

Claims 10 and 17 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over JP '676, as applied to claims 1-3 above, and further in view of newly cited Japanese Patent No. 200102338 (JP '338).

JP '338 does not correct the deficiencies of JP '676, as this reference also fails to disclose or suggest a convex portion or a concave portion "extending in a channel width direction" or "a direction perpendicular to a channel length direction", as recited in the amended independent claims 1-3 and 11-16, respectively. Therefore, claims 10 and 17 are also allowable over the cited prior art.

In summary, none of the prior art, either alone or in combination, discloses the claimed subject matter. Applicants respectfully submit that the application is now in condition for allowance. A prompt passage to issuance is therefore earnestly solicited. In the event that the Examiner is of the opinion that a brief telephone or personal interview will facilitate allowance of one or more of the above claims, the Examiner is courteously requested to contact Applicants' undersigned representative.

Respectfully submitted,

  
\_\_\_\_\_  
Jeffrey L. Costellia  
Registration No. 35,483

NIXON PEABODY LLP  
8180 Greensboro Drive, Suite 800  
McLean, Virginia 22102  
Telephone: (703) 770-9300  
Facsimile: (703) 770-9400

**MARKED-UP VERSION OF AMENDED CLAIMS**

1. (Twice Amended) A semiconductor device comprising a TFT containing an active layer having [a convex portion or a concave portion in] a channel forming region,  
wherein the channel forming region has a convex portion or a concave portion extending in a channel width direction.

2. (Twice Amended) A semiconductor device comprising a TFT containing an active layer having [a convex portion or a concave portion in] a channel forming region,  
wherein the channel forming region has a convex portion or a concave portion extending in a channel width direction, and  
wherein zero or one grain boundary is contained in the channel forming region.

3. (Twice Amended) A semiconductor device comprising a TFT containing an active layer having [a convex portion or a concave portion in] a channel forming region,  
wherein the channel forming region has a convex portion or a concave portion extending in a channel width direction, and  
wherein the number of grain boundaries crossing the channel forming region in the width direction of the channel is zero or one.

11. (Amended) A semiconductor device comprising:  
a semiconductor layer formed over a substrate; and  
a channel forming region and source and drain regions formed in said semiconductor layer,  
wherein said channel forming region has at least one convex portion extending in a direction perpendicular to a channel length direction.

12. (Amended) A semiconductor device comprising:  
a semiconductor layer formed over a substrate; and  
a channel forming region and source and drain regions formed in said semiconductor layer,  
wherein said channel forming region has at least one concave portion extending in a direction perpendicular to a channel length direction.

13. (Amended) A semiconductor device comprising:  
a semiconductor layer formed over substrate; and  
a channel forming region and source and drain regions formed in said semiconductor layer,  
wherein said channel forming region has at least one convex portion extending in a channel width direction.

14. (Amended) A semiconductor device comprising:  
a semiconductor layer formed over a substrate; and  
a channel forming region and source and drain regions formed in said semiconductor layer,  
wherein said channel forming region has at least one concave portion extending in a channel width direction.

15. (Amended) A semiconductor device comprising:  
a semiconductor layer formed over a substrate; and  
a channel forming region and source and drain regions formed in said semiconductor layer,  
wherein said channel forming region has at least one convex portion extending in a direction perpendicular to a carrier flow direction.

16. (Amended) A semiconductor device comprising:
- a semiconductor layer formed over a substrate;
  - a channel forming region and source and drain regions formed in said semiconductor layer; and
- wherein said channel forming region has at least one concave portion extending in a direction perpendicular to a carrier flow direction.